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(54) Umbrella

(57) An umbrella 10 includes a shaft 11, a handle 13, ribs 12, stretchers (not shown), a canopy 14, at least two light sources 21 respectively mounted on the tip of the shaft 11 and at least one of the free ends of the ribs 12, a flash control device 22 and a battery 23, mounted in the handle 13. The umbrella 10 further includes a rain shield 30 connected to the canopy 14 for shielding the user from rain falling at an inclined angle.

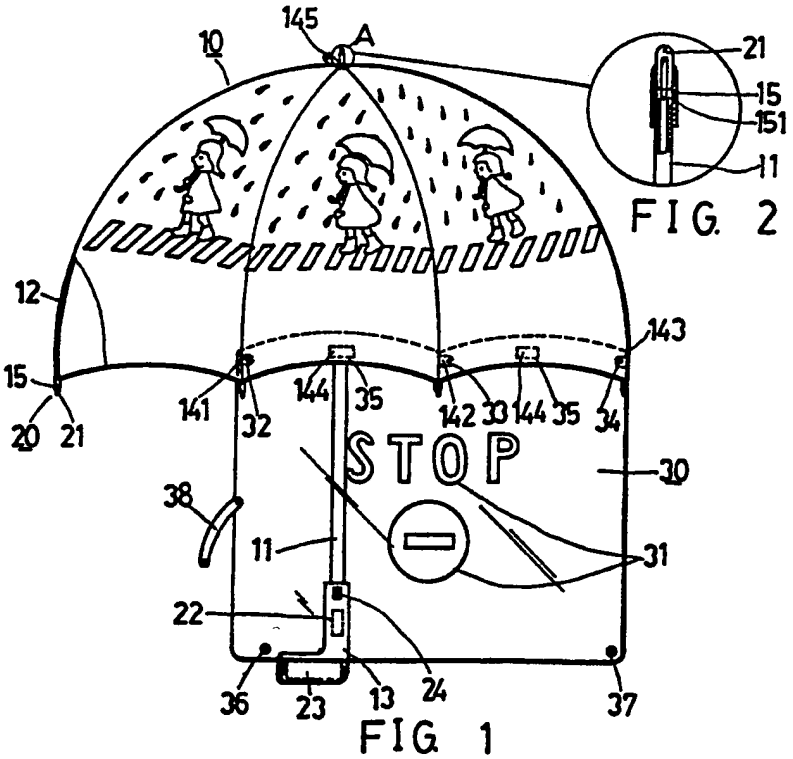

FIG. 2

FIG. 1

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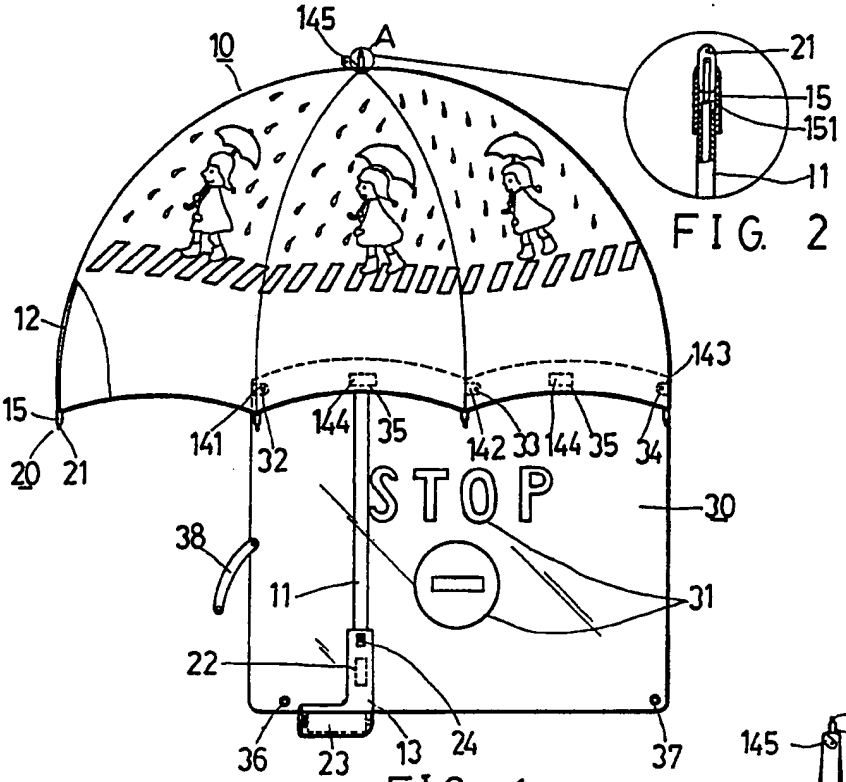

FIG. 1

FIG. 2

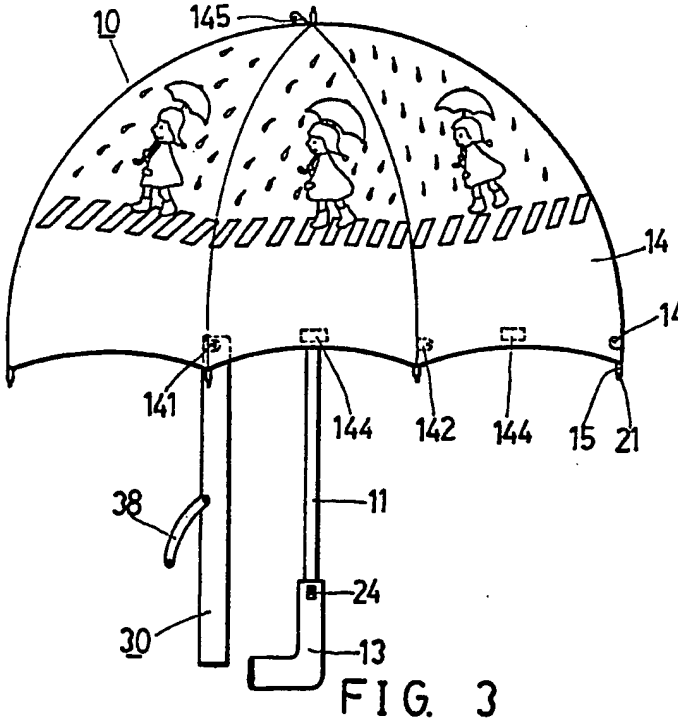

FIG. 3

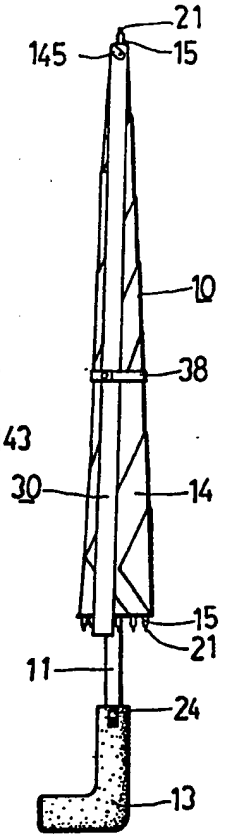

FIG. 4

"Umbrella"

This invention relates to an umbrella, and more particularly to an umbrella including light sources.

There is already on the market an umbrella designed by the present applicants which includes LED's mounted on the tips of the shaft and the ribs, and a flash control device controlling how the LED's should flash to provide an attention-catching effect for the driver driving in the street on a rainy night in order to indicate that there is a user under the umbrella. Such an umbrella, however, suffers from the disadvantage that the user will get wet if direction of rainfall is inclined. Although an inclined umbrella can partly counter the situation, it will interfere with the line of vision of the user and may allow the user's back to get wet.

It is therefore an object of the present invention to provide an umbrella capable of shielding the user from rain falling in an inclined direction.

According to the present invention, there is provided an umbrella comprising a shaft, a handle mounted on the shaft, a plurality of ribs having first ends pivotally connected to one end of the shaft and second ends, a plurality of stretchers having first ends slidably mounted on the shaft and second ends pivotally connected to respective intermediate portions of the ribs, a canopy covering the ribs so as to be stretched by the ribs when the umbrella is put up, at least two light sources respectively mounted on an end of the shaft and at least

one of the second ends of the ribs, a flash control device electrically connected to the light sources, the handle incorporating the flash control device and a compartment for a battery for electrical connection to the flash control device, and the umbrella further including a rain shield having an upper end thereof connected to a lower end of the canopy for shielding the user from rain falling at an inclined angle.

The present invention may best be understood through the following description given by way of example with reference to the accompanying drawing, in which:

Figure 1 is a front view showing a preferred embodiment of an umbrella according to the present invention;

Figure 2 is an enlarged view showing a circled portion A in Figure 1;

Figure 3 is a front view of the umbrella of Figure 1 with the rain shield folded; and

Figure 4 is a front view showing the umbrella of Figure 1 after collapse.

Referring now to Figures 1 to 4, the illustrated umbrella 10 includes as in the prior art a shaft 11, ribs 12 having first ends thereof pivotally connected to a top portion of the shaft 11 and second opposite free ends, stretchers (not shown) having first ends thereof slidably mounted on the shaft 11 and second ends thereof pivotally connected to respective intermediate portions of the ribs 12, a handle 13 mounted on the shaft 11, and a canopy 14

covering the ribs 12 so as to be stretched by the ribs 12. The umbrella 10 further includes an attention catching device 20 and a rain shield 30. Each of the tips or free ends of the shaft 11 and the ribs 12 has thereon an insulating tube 15 having an axial hole 151. The canopy 14 can have printed thereon a coloured pattern and includes at the inner lower end three female button halves 141, 142 and 143 between each adjacent pair of which there is provided a male Velcro tape half 144, and a female half 145 of a snap button around the top portion of shaft 11.

The attention-catching device 20 includes LED's 21 respectively inserted in the axial holes 151, a flash control device 22 which is electrically connected to the LED's 21 and received in the handle 13, which is an astable oscillating circuit constituted by transistors, capacitors nd resistors, and which controls how the LED's 21 should flash, a battery 23 electrically connected to the flash control device 22 and received in the handle 13, and a switch 24 mounted on the handle 13 and electrically connected to the battery 23 for controlling when the battery 23 should provide power. Since the circuit design and the operational theory of such a device 20 are well known in the relevant art, no further details of this will be given here.

The rain shield 30 is transparent and includes a printed warning symbol 31 capable of reflecting the light, at the top end thereof three male button halves 32, 33 and 34 corresponding to female halves 141, 142 and 143 between

each adjacent pair of which there is provided a female Velcro tape half 35 corresponding to the male half 144, at the bottom corners thereof two male halves 36, 37 of snap buttons each of which can be snapped on the female half 145, and a fastening strip 38 for fastening together the canopy 14 after collapse. The rain shield 30 can be used in front of the user to shield at least his upper body from being made wet by rain falling at an inclined angle and can have its top end having a length equal to that of the lower periphery of the front of the canopy 14 to form an annular shield.

When the umbrella 10 is collapsed for storage, the male halves 33, 34 are first disengaged from the female halves 142, 143 and the rain shield 30 is rolled up. After engaging together the male half 36 and the female half 145 by turning the rolled rain shield 30 upwardly, the fastening strip 38 can be used to confine therein the canopy 14 and the rain shield 30.

Through the above description, it should now become readily apparent how and why the present invention can achieve the object it contemplates.

CLAIMS

1. An umbrella comprising a shaft, a handle mounted on the shaft, a plurality of ribs having first ends pivotally connected to one end of the shaft and second ends, a plurality of stretchers having first ends slidably mounted on the shaft and second ends pivotally connected to respective intermediate portions of the ribs, a canopy covering the ribs so as to be stretched by the ribs when the umbrella is put up, at least two light sources respectively mounted on an end of the shaft and at least one of the second ends of the ribs, a flash control device electrically connected to the light sources, the handle incorporating the flash control device and a compartment for a battery for electrical connection to the flash control device, and the umbrella further including a rain shield having an upper end thereof connected to a lower end of the canopy for shielding the user from rain falling at an inclined angle.

2. An umbrella according to claim 1, wherein the rain shield is transparent, and the upper end thereof is connectable to the lower end of the canopy by buttons.

3. An umbrella according to claim 2, wherein, between each pair of adjacent buttons, there is provided a Velcro tape engagement between the canopy and the rain shield.

4 An umbrella according to claim 1, 2 or 3, further comprising a fastening strip provided on one side of the rain shield for fastening together the canopy after

collapse.

5. An umbrella according to any preceding claim, wherein a top portion of the canopy is provided with a female button half, and a bottom portion of the rain shield is provided with a male button half for connection to said female button half.

6. An umbrella according to any preceding claim, wherein a surface of the rain shield has printed thereon a warning symbol capable of reflecting light.

7. An umbrella substantially as hereinbefore described with reference to the accompanying drawing.